Anna Ferguson

[redacted]

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OLIN CORPORATION

McINTOSH, WASHINGTON COUNTY, ALABAMA

JANUARY 19, 1989

[redacted]

THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104(i)(7)(A) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, states "...the term 'health assessment' shall include preliminary assessments of potential risks to human health posed by individual sites and facilities, based on such factors as the nature and extent of contamination, the existence of potential pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified hazardous substances and any available recommended exposure or tolerance limits for such hazardous substances, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The Administrator of ATSDR shall use appropriate data, risk assessments, risk evaluations and studies available from the Administrator of EPA."

In accordance with the CERCLA section cited, ATSDR has conducted this preliminary health assessment on the data in the site summary form. Additional health assessments may be conducted for this site as more information becomes available to ATSDR.

PRELIMINARY HEALTH ASSESSMENT
OLIN CORPORATION
WASHINGTON COUNTY
McINTOSH, ALABAMA
January 19, 1989

Prepared by:
Office of Health Assessment
Agency for Toxic Substances and Disease Registry (ATSDR)

Background

The Olin Corporation site is listed by the U.S. Environmental Protection Agency (EPA) on the National Priorities List (NPL). The 1,500-acre site has been used since the 1950s to manufacture chlorine and caustic soda using a mercury core process. In 1978, the diaphragm cell process replaced the mercury core process, and continues to be used today.

In 1980-82, a system of monitoring wells was installed to track the migration of groundwater and define the hydrogeologic parameters of the area. Additional wells were installed in 1983. Procedures for capping and closing (under Resource Conservation and Recovery Act procedures) the contaminated areas was completed in 1984. Since that time, closure procedures for mercury cell brine, filter backwash, pH, and stormwater ponds have been underway.

The following documents were provided to ATSDR for review: Aerial photographs and topographic maps of December 1984; and the Forward Planning Study, June 6, 1986. These documents form the basis of this preliminary health assessment.

Environmental Contamination and Physical Hazards

The environmental contamination on-site consists of benzene (1,638 ppb), carbon tetrachloride (68 ppb), chlorobenzene (8,800 ppb), chloroform (16,000 ppb), 1,2-dichlorobenzene (5,800 ppb), 1,4-dichlorobenzene (6,600 ppb), toluene (100 ppb), chromium (280 ppb), lead (760 ppb), nickel (820 ppb), mercury (100 ppb), and other chlorinated benzenes in groundwater.

Data collected in 1985 indicates that The environmental contamination has not migrated off-site.

The entire site is fenced and security clearance is needed for entry. No physical hazards other than normal manufacturing hazards are reported on this site.

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Environmental and Exposure Pathways

The environmental pathways of concern are surface water runoff, and sediment and soil erosion. Migration of contaminated groundwater off-site is a potential environmental pathway of concern. If surface water and sediment significantly impact off-site surface waters which are used for recreation by the public, then surface water and bioaccumulation of contaminants in fish may be important pathways also.

The human exposure pathways of concern are ingestion, dermal contact and absorption, and inhalation (volatile components) of groundwater; ingestion and dermal contact with surface water; ingestion of contaminated soil and sediment; and ingestion of contaminated fish.

Demographics

The closest residence is less than one mile from the site. There are an estimated 226 persons residing within a one-mile radius of the site. There are private and public wells in the vicinity.

Evaluation and Discussion

Contact with on-site contaminated environmental media is a remote possibility due to site access restrictions. However, the potential for workers at Olin Corporation to be exposed to hazardous waste exists. Work procedures may prevent excessive contact with these materials. Surface water runoff is channeled eventually into the Tombigbee River, which is used for fishing and other recreational activities. There are no data regarding contaminant levels in consumable fish tissue. This site-related effluent is monitored by the National Pollutant Discharge Elimination System regulations, and apparently this discharge is acceptable. No information is available concerning the potential for contact by humans with the sediments or water in these concrete channels. The alluvial aquifer is contaminated but apparently is hydraulically separate from the Miocene Aquifer, from which the Town of McIntosh draws its water. This public water supply is not contaminated to date.

ATSDR has prepared, or will prepare, Toxicological Profiles on the site contaminants (with the exception of 1,2-dichlorobenzene) noted above.

Conclusions and Recommendations

Based on the available information, this site is considered to be of potential public health concern because of the risk to human health caused by the possibility of exposure to hazardous substances via groundwater, surface water, soil, and sediment. Data are needed on the extent of contamination in these off-site environmental pathways.

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Further environmental characterization and sampling of the site and impacted off-site areas during the Remedial Investigation and Feasibility Study (RI/FS) should be designed to address the environmental and human exposure pathways discussed above. When additional information and data become available, e.g., the completed RI/FS, such material will form the basis for further assessment by ATSDR at a later date.